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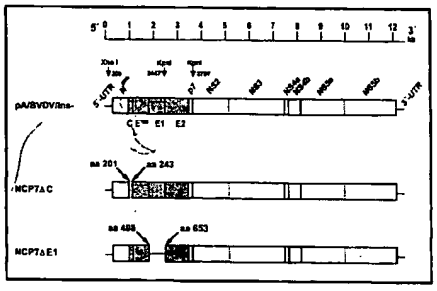
(54) Title: REPLICONS OF PESTIVIRUSES THAT DO NOT EXPRESS C AND OR E1 PROTEIN AND INFECTIOUS VIRAL PARTICLES CONTAINING SAME, THAT CAN BE USED IN VACCINES



(57) Abstract: The present invention provides new Pestiviral RNA genomes (replicons) that are able to replicate, and can be packaged into infectious viral particles in cells that complement the missing protein(s), but do not produce infectious progeny virus. Such replicons can be useful for vaccine purposes. The replicons encode most, preferably all, envelop proteins of the virus, while, on the other hand, it would not be capable of producing infectious progeny virus. The present invention provides a Pestiviral replicon, preferably from the Bovine Viral Diarrhea Virus (BVDV), which expresses all structural proteins except for a functional C or E1 protein. Preferably at least part of the coding sequence of the E1 or C protein has been deleted from said replicon. The present inventors proved for the first time, that both C and E1 structural proteins are essential for the formation of infectious pestiviruses. Furthermore it was shown that deletion of C and E1 does not impact the ability of RNA self-replication. By using cell lines constitutively expressing pestiviral structural proteins, Capsid- or E1-proteins can be efficiently *trans*-complemented. The resulting virions are able to infect bovine target cells and to transfer the replicons without generating replication-competent virus progeny. In other words, no infectious progeny virus is produced. The complemented virions are indistinguishable from wild-type Pestivirus.in virus neutralization experiments. Recombinations yielding infectious wild-type virus were not detected in any of the complementation experiments. The complemented viruses may be used for the safe and efficacious immunization against BVDV.

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